

1 CLAIMS

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3 What is claimed is:

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5       1. A data processing system having recording means  
6 for recording relationships between objects where recording  
7 is done using object identifiers which are uniform in layout  
8 across all object types and furthermore where identifiers  
9 include the object type descriptor and an object number.

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11       2. The data processing system of Claim 1, wherein the  
12 object number of the object identifier is a system-key  
13 (SYSKEY), relative row number or other such row address  
14 which allows for direct access to the object data.

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16       3. The data processing system of Claim 1, wherein  
17 objects can be recorded only after a definition has been  
18 entered allowing for the object type to exist.

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20       4. The data processing system of Claim 3, wherein new  
21 object types can be entered by a user based on supplied  
22 object classes at any time during the life of the system and  
23 does not require programmatic changes or recompilation.

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25       5. The data processing system of Claim 4, where  
26 Object Classes provided are based on common entities used in  
27 commercial applications.

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29       6. The data processing system of Claim 1, wherein  
30 relationships between objects can be recorded only after a  
31 definition has been entered allowing for the relationship  
32 type to exist between the two or more object types.

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34       7. The data processing system of Claim 6, wherein new  
35 allowed relationship definitions can be entered by a user at  
36 any time during the life of the system and does not require  
37 programmatic changes or recompilation.

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1        8. The data processing system of Claim 1, which  
2 allows for inquiries to be formulated to follow existing  
3 relationships from one entity type to another within the set  
4 of defined allowed relationships, and for execution of such  
5 inquiries.

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7        9. The data processing system of Claim 8, which  
8 allows individual inquiries to have their own access  
9 security independent of other inquiries and be attached to  
10 separate menus.

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12        10. A database system in which entities are stored in  
13 a finite set of relative tables (one for each object class),  
14 relationships are stored in a finite set of tables, and the  
15 meaningful interpretation of these two sets of tables is  
16 provided by schema definitions stored in another finite set  
17 of tables (RelDef and EntDef).

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19        11. A machine-implemented database system comprising:  
20              (a) entity recording means for recording data  
21              representative at least of a first entity instance  
22              belonging to a first entity class and a second entity  
23              instance which belongs either to the first entity class  
24              or a second entity class;

25              (b) relation recording means, logically linked to  
26              the entity recording means, for recording first data  
27              identifying the first entity instance, second data  
28              which is opposed to the first data and identifies the  
29              second entity instance and third data which is opposed  
30              to the first and second data and identifies one or more  
31              distinct relations which link the first entity instance  
32              to the second entity instance; and

33              (c) relation reporting means, operatively coupled  
34              to the relation recording means, for examining data  
35              recorded in the relation recording means according to a  
36              search algorithm based on one or two of the first  
37              through third data, for identifying the opposed two or  
38              one of the first through third data and for reporting

1       the identity of said opposed two or one  
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3       12. The system of Claim 11 wherein the entity  
4 recording means comprises:

5             (a.1) a plurality of Entity-instances (Ei) tables  
6 each for recording data representative of entity  
7 instances which belong to an entity class associated  
8 with that Ei table; and

9             (a.2) an Entity-class defining table for  
10 recording entity-class data representative of distinct  
11 entity classes and opposed to such entity-class data,  
12 EiT data identifying one Ei table where all instances  
13 of the corresponding entity-class are recorded.  
14

15       13. The system of Claim 12 wherein the relation  
16 recording means comprises:

17             (b.1) a plurality of Relation-instances (Ri)  
18 tables each of recording data representative of the  
19 distinct relations between the first and secon entity  
20 instances and for associating each of the relations  
21 with a distinct relationship class; and

22             (b.2) a Relation-class defining table for  
23 recording relation-class data representative of each  
24 relation-class data representative of each relation  
25 class and opposed to such relation class data, RiT data  
26 indentifying one Ri table where all instances of the  
27 corresponding relation-class are recorded.  
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29       14. A method for defining in a computerized database  
30 system, relations between entitities, the method comprising:

31             recording first data defining a first entity  
32 class;

33             recording second data defining a second entity  
34 class;

35             recording third data defining a first group of  
36 entity instances belonging to the first entity class;

37             recording fourth data defining a second group of  
38 entity instances belonging to the second entity class;

1       and

2           recording fifth data expressly defining a  
3           relationship instance and connecting said relationship  
4           instant to an instance of the first entity class and to  
5           an instance of the second entity class.

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